

PATENT  
Attorney Docket No. 740250-849

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Patent Application of:	)	Confirmation No.: 2877
Michael MEHIGAN	)	Group Art Unit: 2625
Serial No. 09/938,492	)	Examiner: James A. Thompson
Filed: August 27, 2001	)	
For: <b>METHOD AND APPARATUS FOR</b>	)	Date: January 12, 2007
<b>PROCESSING COLOR IMAGE, AND</b>	)	
<b>RECORDING MEDIUM STORING THEREIN</b>	)	
<b>PROGRAM FOR CARRYING OUT THE</b>	)	
<b>METHOD</b>	)	

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Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

**APPEAL BRIEF**

As set forth in the Notice of Appeal filed October 12, 2006, Appellants hereby appeal the Examiner's twice rejection of claims 1-4 and 6-14 of the above-identified application. Appellants respectfully request that the Board of Patent Appeals and Interferences reverse the rejection of these claims.

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**I. REAL PARTY IN INTEREST**

Riso Kagaku Corporation is the real party in interest.

**II. RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences.

**III. STATUS OF CLAIMS**

Claims 1-4, and 6-14 have been twice rejected and are the subject matter of this appeal. Claim 5 has been cancelled.

**IV. STATUS OF AMENDMENTS**

No amendment has been filed or submitted after the final rejection mailed July 12, 2006.

**V. SUMMARY OF CLAIMED SUBJECT MATTER**

This Appeal is taken from claims 1-4 and 6-14, of which claims 1 and 8 are independent.

With respect to claim 1, the present invention recited therein relates to a method of processing a halftone color image when the halftone color image is to be printed in monochrome, the method including the steps of detecting a predetermined property of a line-like part of the halftone color image, and processing the line-like part of the halftone color image by a clustered dot dithering technique or a dispersed dot dithering technique according to the predetermined property of the line-like part, wherein the predetermined property includes both the thickness and the density of the line-like parts so that, when the line-like part is of a thickness smaller than a first threshold value and at the same time is of a density higher than a second threshold value, the part is processed by the dispersed dot dithering technique and otherwise the part is processed by the clustered dot dithering technique. Support for the claimed features can be found at least on e.g., Figures 4 and 5, page 10, line 2 to page 11, line 9 and page 11, line 25 to page 13, line 13 of the specification.

Claims 2-4, 6-7, and 12 depend from independent claim 1. Claims 2-4, 6-7, and 12 describe additional features of the method of independent claim 1, including, for example, features relating to the halftone color image being printed in monochrome by a printer which

is not higher than 600 dpi in resolution; features relating to the predetermined property being the thickness of the line-like part so that when the line-like part is of a thickness larger than a threshold value, the part is processed by the clustered dot dithering technique and when the part is of a thickness not larger than the threshold value, the part is processed by the dispersed dot dithering technique; features relating to the threshold value being a value corresponding to 4 dots; features relating to two series of brush patterns being respectively prepared in advance for the clustered dot dithering technique and the dispersed dot dithering technique, each series of brush patterns being prepared according to the density of the line-like part, and the clustered dot dithering technique and the dispersed dot dithering technique are carried out by the use of the brush patterns selected according to the density of the line-like part; and features relating to the predetermined property including both the thickness and the density of the line-like parts and detection of the line-like part of the image is carried out using attribute data. Claims 2-4, 6-7, and 12 are supported at least by page 9, lines 19-24 and page 10, line 2 to page 11, line 9 of the specification.

Claims 10, 11, and 14 depend from independent claim 1, and recite a recording medium in which a program for carrying out the method defined in claim 1 is recorded, as well as additional features including the halftone color image being printed in monochrome by a printer which is not higher than 600 dpi in resolution, and the predetermined property including both the thickness and the density of the line-like parts and detection of the line-like part of the image is carried out using attribute data. Claims 10, 11, and 14 are supported at least by page 7, line 25 to page 8, line 6 of the specification.

With respect to claim 8, the present invention recited therein relates to an apparatus for processing a halftone color image when the halftone color image is to be printed in monochrome, the apparatus including a selecting means which selects a clustered dot dithering technique or a dispersed dot dithering technique according to a predetermined property of a line-like part of the halftone color image, and a processing means which processes the line-like part of the halftone color image by the technique selected by the selecting means. Support for the claimed features can be found at least on e.g., Figures 4 and 5, page 10, line 2 to page 11, line 9 and page 11, line 25 to page 13, line 13 of the specification.

Claims 9 and 13 depend from independent claim 8. Claims 9 and 13 describe additional features of the apparatus of independent claim 8, including, for example, features relating to the halftone color image being printed in monochrome by a printer which is not higher than 600 dpi in resolution, and features relating to the predetermined property including both the thickness and the density of the line-like parts and detection of the line-like part of the image is carried out using attribute data. Claims 9 and 13 are supported at least by page 9, lines 19-24, and page 10, line 2 to page 11, line 9 of the specification.

## **VI. GROUNDS OF REJECTION**

Appellants respectfully request the Board to reverse the following grounds of rejection:

Rejection of claims 10, 11, and 14 under 35 U.S.C. §101 as being unpatentable because the claimed invention is directed to non-statutory subject matter.

Rejection of claims 1, 8, 10, and 12-14 under 35 U.S.C. §103(a) as being unpatentable for obviousness over U.S. Patent No. 4,998,122 to Kanno (hereinafter “Kanno”) in view of U.S. Patent No. 5,438,431 to Ostromoukhov (hereinafter “Ostromoukhov”).

Rejection of claims 2-3, 7, 9, and 11 under 35 U.S.C. §103(a) as being unpatentable for obviousness over Kanno in view of Ostromoukhov and U.S. Patent No. 5,153,576 to Harrington (hereinafter “Harrington”).

Rejection of claim 4 under 35 U.S.C. §103(a) as being unpatentable for obviousness over Kanno in view of Ostromoukhov and Harrington and obvious engineering design choice.

Rejection of claim 6 under 35 U.S.C. §103(a) as being unpatentable for obviousness over Kanno in view of Ostromoukhov and Harrington and U.S. Patent No. 6,034,782 to Hines (hereinafter “Hines”).

## VII. ARGUMENTS

The rejection of claims 10, 11, and 14 under 35 U.S.C. §101, as being unpatentable because the claimed invention is directed to non-statutory subject matter, should be REVERSED.

35 U.S.C. § 101 imposes the requirement that an invention, to be patentable, must be directed to statutory subject matter, which is “any new and useful process, machine, manufacture, or composition of matter.” As the Supreme Court held, Congress chose the expansive language of 35 U.S.C. § 101 so as to include “anything under the sun that is made by man.” *Diamond v. Chakrabarty*, 447 U.S. 303, 308-09, 206 USPQ 193, 197 (1980). “The use of the expansive term ‘any’ in section 101 represents Congress’s intent not to place any restrictions on the subject matter for which a patent may be obtained beyond those specifically recited in section 101 and the other parts of Title 35.... Thus, it is improper to read into section 101 limitations as to the subject matter that may be patented where the legislative history does not indicate that Congress clearly intended such limitations.” *In re Alappat*, 33 F.3d at 1542, 31 USPQ2d at 1556.

With regard to the § 101 rejection of claims 10, 11, and 14, Appellant respectfully disagrees with the Examiner’s assertion that the claims are directed to non-statutory subject matter. This rejection is respectfully traversed and reversal of the Examiner’s position with respect thereto is solicited in that the claims are directed to statutory subject matter.

Claim 10 recites a recording medium in which a program for carrying out the method defined in Claim 1 is recorded. Claims 11 and 14 depend from claim 10 and include further limitations, including the limitation that the halftone color image is printed in monochrome by a printer which is not higher than 600 dpi in resolution, and the limitation that the predetermined property includes both the thickness and the density of the line-like parts and detection of the line-like part of the image is carried out using attribute data.

Claim 10 is directed to a readable medium with instructions recorded on it, which is functional descriptive language that is structurally and functionally interrelated to the medium. In most cases this language will be statutory since the function of the descriptive material will be realized. See, e.g., Annex IV of the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility (November 2005).

The Examiner states, in the rejection of the Office Action dated July 12, 2006, that “[c]laims 10, 11 and 14 recite a recording medium which records a program. Thus, claims 10, 11 and 14 simply recite a program listing. Claims 10, 11 and 14 do not in and of themselves produce any concrete, tangible and useful result. Claims 10, 11 and 14 do not recite any process, machine, article of manufacture, or composition of matter, and are thus non-statutory.” Appellant respectfully disagrees.

Claims 10, 11, and 14 are directed to a readable medium that has recorded on it, the method of claim 1 for processing a halftone color image when the halftone color image is to be printed in monochrome, which includes the steps of detecting a predetermined property of a line-like part of the halftone color image, and processing the line-like part of the halftone color image by a clustered dot dithering technique or a dispersed dot dithering technique according to the predetermined property of the line-like part, wherein the predetermined property includes both the thickness and the density of the line-like parts so that, when the line-like part is of a thickness smaller than a first threshold value and at the same time is of a density higher than a second threshold value, the part is processed by the dispersed dot dithering technique and otherwise the part is processed by the clustered dot dithering technique.

Thus, claims 10, 11, and 14 include instructions to process a halftone color image when the halftone color image is to be printed in monochrome, thus realizing the concrete, tangible and useful result of more accurately rendering a halftone color image in monochrome, using various dithering techniques. Additionally, the claimed system has real world value because it can benefit users in the field of printed documents. A readable medium as described and claimed in the present invention is not an intangible thing such as an abstract idea because it is a real, physical thing, that, when used in a printer or other reading device, more accurately processes a halftone color image in monochrome.

Thus, claims 10, 11, and 14 are directed to statutory subject matter and the rejection of the claims should be reversed.

The rejection of claims 1, 8, 10, and 12-14 under 35 U.S.C. § 103(a), as unpatentable over Kanno in view of Ostromoukhov, should be REVERSED.

35 U.S.C. § 103 imposes the requirement that an invention, to be patentable, must not have been obvious over the prior art “at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” A proper prima facie showing of obviousness requires the U.S. Patent and Trademark Office (“PTO”) to satisfy three requirements. First, the prior art itself must suggest the desirability and, therefore, obviousness of a modification of a reference or the combination of references to achieve a claimed invention. *See Hodosh v. Block Drug Co.*, 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986); *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984); *see also In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Second, the PTO must show that, at the time the invention was made, the proposed modification had a reasonable expectation of success. *See Amgen v. Chugai Pharm. Co.*, 927 F.2d 1200, 1209, 18 USPQ2d 1016, 1023 (Fed. Cir. 1991). Finally, the combination of references must teach or suggest each and every limitation of the claimed invention. *See In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Further, the question of obviousness should be analyzed in light of the holding of *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966) which sets forth the following factors for determining obviousness: (1) the scope and content of the prior art; (2) differences between the prior art and the claims at issue; (3) the level of ordinary skill in the pertinent art; and (4) such objective evidence of non-obviousness as commercial success, long felt but unresolved needs, and failure of others. All evidence must be weighed before reaching a conclusion on obviousness under § 103. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1564, 1 USPQ2d 1593, 1594 (Fed. Cir. 1987); *Hodosh v. Block Drug*, 786 F.2d at 1143, 229 USPQ at 187-88.

With regard to the §103(a) rejection of claims 1, 8, 10, and 12-14 over Kanno in view of Ostromoukhov, Appellant respectfully disagrees with the Examiner’s assertion of obviousness. This rejection is respectfully traversed and reversal of the Examiner’s position with respect thereto is solicited in that the Kanno reference and the Ostromoukhov reference cited by the Examiner neither disclose nor suggest that which is presently set forth by Appellants’ claimed invention.



With respect to independent claim 1, this claim recites a method of processing a halftone color image when the halftone color image is to be printed in monochrome, the method including the steps of detecting a predetermined property of a line-like part of the halftone color image, and processing the line-like part of the halftone color image by a clustered dot dithering technique or a dispersed dot dithering technique according to the predetermined property of the line-like part, wherein the predetermined property includes both the thickness and the density of the line-like parts so that, when the line-like part is of a thickness smaller than a first threshold value and at the same time is of a density higher than a second threshold value, the part is processed by the dispersed dot dithering technique and otherwise the part is processed by the clustered dot dithering technique. Similarly, independent claim 8 recites an apparatus for processing a halftone color image when the halftone color image is to be printed in monochrome, the apparatus including a selecting means which selects a clustered dot dithering technique or a dispersed dot dithering technique according to a predetermined property of a line-like part of the halftone color image, and a processing means which processes the line-like part of the halftone color image by the technique selected by the selecting means. It is respectfully submitted that the combination proposed by the Examiner fails to disclose or suggest such features.

In rejecting Appellants' claimed invention, the Examiner has taken the position that the patent to Kanno discloses all those limitations set forth in accordance with the Appellant's claimed invention except that Kanno does not disclose expressly that the halftone image is a halftone color image; that the first dithering technique is a clustered dot dithering technique; and that the second dithering technique is a dispersed dot dithering technique. The Examiner goes on to rely on the teachings of Ostromoukhov to overcome such short comings.

Particularly, in the rejection of claim 1, the Examiner asserts that col. 4, lines 15-20 and Fig. 9 A-C of Kanno teaches detecting a predetermined property of a line-like part, that col. 5, lines 3-6 and lines 21-27 disclose processing a line-like part of a halftone image by a first dithering technique, and that col. 9, lines 36-43 discloses a second dithering technique. However, Appellant respectfully notes that Kanno actually discloses the following:

Col. 4, lines 15-20 -

The image binarization apparatus processes the image information, supplied thereto from the image reader, in units of 4x4 picture elements. In other words, the image

binarization apparatus first determines whether a picture element of interest which is included in a local region of 4x4 represents a character, a photograph, or a bold character, and then binary-encodes the image of the picture elements in different ways on the basis of the determination.

Col. 5, lines 3-6 and 21-27:

FIG. 3 shows an example of a dithering matrix stored in memory 7A of second threshold value calculation section 7. The numbers in FIG. 3 are threshold values corresponding to the respective picture elements...

Based on the threshold value, binary-encoding section 8 binary-encodes the image information supplied thereto from delay circuit 3, and the binary-encoded image information is supplied to selector section 9. This selector section 9 selects "1" data and outputs it, if determination section 4 determine that the local region represents a bold-character portion.

Col. 9, lines 36-43:

If, in Step 100, the picture element of interest is determined as representing a leading edge, data "0" is read out of memory 37 of decoder 30 and is supplied to selector section 9 (Steps 101 and 102). In other words, the local region is determined as not being a bold character portion, and selector section 9 selects the image which has been binary-encoded by second threshold calculation section 7.

As summarized above and in Fig. 9, an original image is divided into units of 4 picture elements so that an image binarization apparatus can determine whether a picture element of interest included in the region is a character, a photograph, or a bold character.

In order to understand Kanno in the proper context, Appellant respectfully refers to col. 4, lines 57-68, col. 5, lines 7-14 and Fig. 1 which further supplements the Examiner's cited text of Kanno and further clarifies the meaning thereof. Specifically, Kanno further discloses therein that a first threshold value calculation section 6 calculates a threshold value used for binary-encoding a character, and that a second threshold value calculation section 7

calculates a threshold value used for binary encoding a photograph portion, and that threshold value selection section 5 receives results of the determination from the first threshold value calculation section 6 and the second threshold value calculation section 7 to see whether the local region represents a photograph portion or a character portion.

Clearly, although Kanno discloses a “dithering matrix”, which is called “a first dithering technique” by the Examiner, there is no other dithering technique (i.e., no “second dithering technique”) supported in the Examiner’s cited text. That is, there appears to be no “second dithering technique” as allegedly disclosed in col. 9, lines 36-43 of Kanno. Appellant respectfully asserts that, as discussed above, Kanno teaches a technique that includes using various thresholds to determine whether a portion of image is a character, a photo, or a bold character.

Further, as acknowledge by the Examiner, Kanno fails to teach, disclose or suggest a cluster dot dithering or a dispersed dot dithering technique. Appellant respectfully agrees with the Examiner’s admission and would like to further asserts specifically that there is no teaching, disclosure or suggestion in Kanno of detecting a predetermine property of a line-like part of a halftone color image, and processing the line-like part of the halftone color image by a clustered dot dithering technique or a dispersed dot dithering technique according to the detected predetermined property of the line-like part of the halftone color image, as recited in Appellant’s claim 1, and that there is no teaching, disclosure or suggestion of a selecting means which selects a clustered dot dithering technique or a dispersed dot dithering technique according to a predetermined property of a line-like part of a halftone color image, as recited in Appellant’s claim 8.

With respect to Ostromoukhov, Appellant acknowledges that the dispersed-dot dithering technique and the clustered-dot dithering technique are discussed in the reference. Further, each of these dithering techniques is known, as discussed in the “Background of the Invention” section of Appellant’s specification. However, when taking the disclosure of Ostromoukhov in proper context, the dispersed-dot and cluster-dot dithering methods are only separately discussed in the Background of the Invention section of Ostromoukhov as various known dithering methods and their respective problems in general. The actual disclosed and claimed invention of Ostromoukhov is directed to improved dispersed-dot dithering and not to a method in which either dispersed-dot or cluster-dot dithering is used in

The rejection of claim 4 under 35 U.S.C. § 103(a), as unpatentable over Kanno in view of Ostromoukhov and Harrington and obvious engineering design choice, should be REVERSED.

With regard to the §103(a) rejection of claim 4 over Kanno in view of Ostromoukhov and further in view of Harrington and obvious engineering design choice, Appellant respectfully traverses. This rejection is respectfully traversed and reversal of the Examiner's position with respect thereto is earnestly solicited in that Kanno, Ostromoukhov, Harrington and the obvious engineering design choice cited by the Examiner neither disclose nor suggest that which is presently set forth by Appellants' claimed invention.

Again, while the patent to Harrington may disclose printing a halftone image in monochrome, this reference fails to overcome the shortcomings of the prior combination as noted above. Furthermore, while 4 dots may be one value which the line-like part could be considered bold, it is respectfully submitted that claim 4, which is dependent upon independent claim 1, clearly distinguishes over the combination proposed by the Examiner and is in proper condition for allowance for the reasons discussed hereinabove with respect to claim 1. Consequently, Appellant respectfully submits that the Examiner's rejection of claim 4 under 35 U.S.C. § 103(a) should be reversed.

The rejection of claim 6 under 35 U.S.C. § 103(a), as unpatentable over Kanno in view of Ostromoukhov and Harrington and Hines, should be REVERSED.

With regard to the §103(a) rejection of claim 6 over Kanno in view of Ostromoukhov and further in view of Harrington and Hines, Appellant respectfully traverses. This rejection is respectfully traversed and reversal of the Examiner's position with respect thereto is earnestly solicited in that Kanno, Ostromoukhov, Harrington, and Hines cited by the Examiner neither disclose nor suggest that which is presently set forth by Appellants' claimed invention.

Again, while the patent to Hines may disclose using a printer driver to perform image data dithering, this reference fails to overcome the shortcomings of the prior combination as noted above. Therefore, it is respectfully submitted that claim 6, which is dependent upon independent claim 1, clearly distinguishes over the combination proposed by the Examiner and is in proper condition for allowance for the reasons discussed hereinabove with respect to

process that depends on a detected predetermined property of a line-like part of a halftone color image, as in Appellant's claimed invention.

Still further, as disclosed in col. 1, lines 8-15, the disclosed invention of Ostromoukhov relates to a method and apparatus enabling color or black/white bi-level or multi-level halftone images to be displayed or printed on various raster output devices (cathode ray tubes, plasma displays, liquid crystal displays) or on printing devices (printers, telefaxes). Moreover, col. 2, lines 38-43 discloses that the invention of Ostromoukhov is effective for 300 and 400 ink-jet printer as well as for 300, 400, 600 and 800 dpi laser printers. Hence, Appellant respectfully submits that there is no clear teaching or suggestion of processing a halftone color image to print a monochromatic image as in Appellant's claimed invention. Moreover, with the teaching of using the method of improved dispersed-dot dithering that is used for a range of resolution, including 800 dpi, the invention of Ostromoukhov does not address the issues and solutions of Appellant's invention which includes monochromatic printing by a printer that is not higher than 600 dpi in resolution.

Moreover, the presently claimed invention of claims 1 and 8 recites selecting a cluster dot dithering technique or a dispersed dot dithering technique based on a condition. This condition is a predetermined property of a line-like part. Appellant respectfully asserts that neither Ostromoukhov nor Kanno teaches the determination of the condition that affects the selection of the cluster dot dithering or the dispersed dot dithering technique. Appellant respectfully submits that the condition by which the dither technique to be used is predetermined is also a claimed feature that must be considered by the Examiner in making a prima facie case of obviousness rejection.

As previously submitted, Ostromoukhov merely discusses the advantages and disadvantages of various dithering techniques separately in general but not the use of dot dithering technique or dispersed dot dithering based on a predetermined condition in a process or an apparatus.

In view of the arguments set forth above with respect to Kanno and Ostromoukhov, it is respectfully submitted that one of ordinary skill in the art would not be motivated in the manner suggested by the Examiner to modify the device and method of Kanno to apply dithering matrix of Kanno and the improved dispersed-dot dithering of Ostromoukhov. Even

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Kanno and Ostromoukhov were combined, the references would still fail to teach, disclose or suggest each and every claimed limitation, as discussed above.

Thus, neither Kanno nor Ostromoukhov teach or suggest each and every step of the method as recited in independent claims 1 and 8. Therefore, independent claims 1 and 8 are patentable over Kanno and Ostromoukhov.

For the same reasons set forth above in relation to the 35 U.S.C. § 103(a) rejection of independent claims 1 and 8, dependent claims 10 and 12-14 are also patentable over Kanno and Ostromoukhov.

The rejection of claims 2-3, 7, 9, and 11 under 35 U.S.C. § 103(a), as unpatentable over Kanno in view of Ostromoukhov and Harrington, should be REVERSED.

With regard to the §103(a) rejection of claims 2-3, 7, 9, and 11 over Kanno in view of Ostromoukhov and further in view of Harrington, Appellant respectfully traverses. This rejection is respectfully traversed and reversal of the Examiner's position with respect thereto is earnestly solicited in that Kanno, Ostromoukhov, and Harrington cited by the Examiner neither disclose nor suggest that which is presently set forth by Appellants' claimed invention.

While the patent to Harrington may disclose printing a halftone image in monochrome, this reference fails to overcome the shortcomings of the prior combination as noted above. Accordingly, it is respectfully submitted that claims 2-3, 7, 9 and 11, which are dependent upon one of independent claims 1 or 8, clearly distinguish over the combination proposed by the Examiner and are in proper condition for allowance. Consequently, Appellant respectfully submits that the Examiner's rejection of claims 2-3, 7, 9 and 11 under 35 U.S.C. § 103(a) should be reversed.

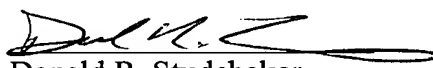
claim 1. Consequently, Appellant respectfully submits that the Examiner's rejection of claim 6 under 35 U.S.C. § 103(a) should be reversed.

Conclusion

Since the Examiner's rejections under 35 U.S.C. § 101 and 103(a) are inappropriate for the reasons set forth above, Appellants respectfully request the Board to reverse each ground of rejection.

Respectfully submitted,  
**NIXON PEABODY, LLP**

Date: 1/12/07

  
Donald R. Studebaker  
Reg. No. 32,815

**CUSTOMER NO. 22204**  
**NIXON PEABODY, LLP**  
401 9<sup>th</sup> Street, Suite 900  
Washington D.C. 2004-2128  
Tel: (202) 585-8250  
Fax: (202) 585-8080

## VIII. CLAIM APPENDIX

### Claims Involved in the Appeal

1. A method of processing a halftone color image when the halftone color image is to be printed in monochrome, the method comprising the steps of:  
detecting a predetermined property of a line-like part of the halftone color image, and  
processing the line-like part of the halftone color image by a clustered dot dithering technique or a dispersed dot dithering technique according to the predetermined property of the line-like part,  
wherein the predetermined property includes both the thickness and the density of the line-like parts so that, when the line-like part is of a thickness smaller than a first threshold value and at the same time is of a density higher than a second threshold value, the part is processed by the dispersed dot dithering technique and otherwise the part is processed by the clustered dot dithering technique.
2. A method as defined in Claim 1 in which the halftone color image is printed in monochrome by a printer which is not higher than 600 dpi in resolution.
3. A method as defined in Claim 2 in which the predetermined property is the thickness of the line-like part so that when the line-like part is of a thickness larger than a threshold value, the part is processed by the clustered dot dithering technique and when the part is of a thickness not larger than the threshold value, the part is processed by the dispersed dot dithering technique.
4. A method as defined in Claim 3 in which the threshold value is a value corresponding to 4 dots.
6. A method as defined in Claim 2 characterized by being carried out by a printer driver.
7. A method as defined in Claim 2 in which two series of brush patterns are respectively prepared in advance for the clustered dot dithering technique and the dispersed dot dithering technique, each series of brush patterns being prepared according to the density of the line-like part, and the clustered dot dithering technique and the dispersed dot dithering technique



are carried out by the use of the brush patterns selected according to the density of the line-like part.

8. An apparatus for processing a halftone color image when the halftone color image is to be printed in monochrome, the apparatus comprising:

a selecting means which selects a clustered dot dithering technique or a dispersed dot dithering technique according to a predetermined property of a line-like part of the halftone color image, and

a processing means which processes the line-like part of the halftone color image by the technique selected by the selecting means.

9. An apparatus as defined in Claim 8 in which the halftone color image is printed in monochrome by a printer which is not higher than 600 dpi in resolution.

10. A recording medium in which a program for carrying out the method defined in Claim 1 is recorded.

11. A recording medium as defined in Claim 10 in which the halftone color image is printed in monochrome by a printer which is not higher than 600 dpi in resolution.

12. The method as defined in claim 1, wherein the predetermined property includes both the thickness and the density of the line-like parts and detection of the line-like part of the image is carried out using attribute data.

13. The apparatus as defined in claim 8, wherein the predetermined property includes both the thickness and the density of the line-like parts and detection of the line-like part of the image is carried out using attribute data.

14. The recording medium as defined in claim 10, wherein the predetermined property includes both the thickness and the density of the line-like parts and detection of the line-like part of the image is carried out using attribute data.

**XI. EVIDENCE APPENDIX**

There is no additional evidence relied upon in this brief.

**X. RELATED PROCEEDINGS APPENDIX**

There are no related appeals or interferences.